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THE BANDED-SPORE TRICHIAS.

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Of the three Trichias, *Tr. chrysosperma*, Bull., *Tr. affinis*, De By., and *Tr. Jackii*, Rostfki., characterized by reticulated or banded spores, the first is the only one as yet recorded as an American species. While it is undoubtedly our common form, plants answering the descriptions of the other two species, except in one important particular, are not rare. The chief points of specific difference between these three species are found in the markings of the spores and elaters, or threads, and may be summarized from the description of Rostafinski as follows:

"The spores of all are globose and provided with external ridges or thickened bands of varying shape raised upon the surface of the spores."

In *Trichia chrysosperma*, these ridges are uniform in width, forming a network of polygonal meshes, each ridge being of greater heigth than width. In *Tr. affinis* and *Tr. Jackii*, the ridges are of greater width than height, and are fitted with cylindrical, well-like openings perpendicular to the surface of the spore, which pits are characteristic of these two species only. The spore bands of *Tr. affinis* are not uniform in width and form a network of irregular meshes provided with a single row of pits in the median line of the bands. The spore bands of *Tr. Jackii* either branch irregularly, or form an irregular net, or appear as an irregular spot with a wavy outline, all, however, sometimes in the same spore. These bands are sufficiently wide to give space for a clump, or two or more rows of pits. Again, the elaters of *Tr. chrysosperma* are usually 8.3 mic. m. wide, exceptionally only five mic. m., with from 3—5 spirals, and, connecting each two adjoining spirals, there are thin ridges or veins, parallel to the axis of the elater, as long only as the interspiral spaces. The elaters of *Tr. affinis* are non-spinulose, 4.15 mic. m. wide, with from 3—5 spirals, and the interspiral ridges are wanting. The elaters of *Tr. Jackii* are 4.5 mic. m. wide, with from 3—4 spirals, which are studded with sharp spines sometimes 2 mic. m. in length. The interspaces between the spirals are wider and the interspiral ridges are also wanting. In the summary, only the microscopical features are given.

The following analysis of the results of the examination of a large number of specimens of *Trichia*, obtained from widely separated localities by personal collection or from correspondents, shows some interesting and unexpected facts, and permits conclusions to be drawn which may necessitate a revising of specific lines. By far the larger number of specimens examined were, undoubtedly, *Tr. chrysosperma*, Bull., and as they, with two exceptions, differ in no respect from the typical description, I have omitted them from the list:

1. West Fairmount Park, Philadelphia, Pa. Spores distinctly of the *Tr. Jackii* type with bands pitted, irregularly branched and zigzag in outline; elaters spinulose, 4.5 mic. m. wide; interspiral ridges present, but few in number, irregular and indistinct.

2. Fairmount Park, Philadelphia, Pa. Spores of the *Tr. Jackii* type; elaters spinulose, 4.5 mic. m. wide; interspiral ridges present and distinct.

3. Fairmount Park, Philadelphia, Pa. Spores of the *Tr. Jackii* type; elaters very spinulose, 4.5 mic. m. wide; interspiral ridges present and very distinct.

4. Fairmount Park, Philadelphia, Pa. Spores of the *Tr. affinis* type principally, with a small proportion of *Tr. Jackii* spores; elaters spinulose with short spines, 4.5 mic. m. wide; interspiral ridges present, but not all parallel to the axis of elater, some connecting with the adjacent spirals at acute angles.

5. Fairmount Park, Philadelphia, Pa. Spores of the *Tr. Jackii* type; elaters spinulose, 4.5 mic. m. wide; interspiral ridges present but indistinct.

6. Chestnut Hill, Philadelphia, Pa. Spores distinctly of *Tr. affinis* type; elaters slightly spinulose, 4.5 mic. m. wide; interspiral ridges present.

7. Gray's Ferry, Philadelphia, Pa. Spores with broad bands, in a polygonal mesh, with only a single row of pits; elaters 4.5 mic. m. wide, spinulose, spines 1.5 mic. m. long and broad interspaces between spirals; interspiral ridges present and distinct.

8 East Park, Philadelphia, Pa. Spores of *Tr. affinis* type with some *Tr. Jackii* spores; elaters 4.5 mic. m. wide; spinulose with spines 1.5 mic. m. long; broad interspaces between spirals and interspiral ridges present and distinct.

9. Fairmount Park, Philadelphia, Pa. (L. Thomas); spores distinctly of *Tr. affinis* type, but the bands with broken or interrupted meshes; elaters 4.5 mic. m. wide and spinulose, ends of elaters long and thin; interspiral ridges present and distinct.

10. Thousand Isles, St. Lawrence river. Spores of both *Tr. affinis* and *Tr. Jackii* types, the former somewhat in excess; elaters spinulose, 4.5 mic. m. wide; interspiral ridges present and very distinct.

11. Newfield, N. J. (J. B. Ellis). Spores distinctly of *Tr. affinis* type, occasionally varying to the *Tr. Jackii* type; elaters spinulose, 4.5 mic. m. wide; interspiral ridges present and very distinct.

12. Iowa (E. W. Holway). Spores equally of the *Tr. affinis* and *Tr. Jackii* type; elaters 4.5 to 5 mic. m. wide, minutely spinulose, and the interspiral ridges very distinct.

13. Ohio (A. P. Morgan). Spores largely of *Tr. chrysosperma* type, with shallow, irregularly-meshed ridges, the balance passing into a *Tr. affinis* type, with few or many pits, as the width of the bands will permit, elaters 6 mic. m. wide; irregularly spinulose and the interspiral ridges large and distinct.

14. Adirondack Mts., N. Y. Spores typical of *Tr. chrysosperma*; elaters 7.5 mic. m. wide, minutely but densely spinulose, elater ends various, sometimes terminating with a short point, or bluntly without a point but bristling with the ends of the spirals, or with a very long, slender, smooth end three or four times the length of the diameter of the elaters; interspiral ridges very numerous, crowded close together and irregular, not all parallel to the axis of the elater.

Of these specimens, Nos. 13 and 14 are varieties of *Tr. chrysosperma*, Bull., No. 13 being a transitional form. All of the other numbers have, in the same sporangia, the pitted, banded spores characteristic of *Tr. affinis* and *Tr. Jackii* only, and elaters with the interspiral ridges characteristic of *Tr. chrysosperma* only. Other irregularities are also noticeable. In Nos. 4, 6 and 9, with spores of a pronounced *Tr . affinis* type, we have spinulose elaters, a characteristic of *Tr. Jackii* and in Nos. 7 and 8, also with spores of a *Tr. affinis* type, we have in the elaters the broad interspiral spaces belonging to *Tr. Jackii*. With such discrepancies in leading specific characteristics, I can only refer my specimens to *Tr. affinis*, De By., and *Tr. Jackii* Rfki., provisionally, as I have not been able to obtain authenticated specimens of these species for comparison. The examination was made with a one-sixteenth Zeiss immersion objective, which showed clearly and positively all the points noted. The external appearance of the sporangia of these *Trichias* is sufficiently different to enable one, with a little experience, to separate readily the pitted spore species from *Tr. chrysosperma*. The former cannot be distinguished from each other, without the aid of a microscope, with any degree of certainty.

NEW SPECIES OF FUNGI FROM VARIOUS LOCALITIES.

BY J. B. ELLIS AND B. M. EVERHART.

A large proportion of the species here described were collected by the Rev. A. B. Langlois, in Louisiana, mostly in Plaquemines county, not far from Baton Rouge.

DACRYMYCES CORTICIOIDES, E. & E.. var. CANIGENA.—On scales of pine cones (*P. rigida*), Newfield, N. J., May, 1886. Obicular, about 1 millim diam., flattish, convex, centrally attached, pale yellow,